PHP129

IMPACT OF COMPARATIVE EFFECTIVENESS RESEARCH ON BIOMEDICAL INNOVATION AND POPULATION HEALTH

Pritchard DE[1], Eber M[2], Huesch MD[3], Dubois RW[1], Lakdawalla D[3]

[1]*National Pharmaceutical Council, Washington, DC, USA,* [2]*Precision Health Economics, Los Angeles, CA, USA,* [3]*University of Southern California, Los Angeles, CA, USA*

OBJECTIVES: The use of Comparative Effectiveness Research (CER) is intended to help patients and providers make sound health care and treatment decisions. However, little is known about the impact of CER on financial incentives for medical innovation and, ultimately, the health of future generations. Using a microsimulation approach, we analyze the impacts of potential CER policies on biomedical innovation and population health in the United States and Europe. **METHODS:** We selected three clinical scenarios that reflect broad trends for assessing the impacts of CER policies on innovation returns: growth in personalized medicine; increasing demand for head-to-head trials; and changes in size and complexity of trials. We estimated the impact on development costs, revenue, and the timing of returns (lags between development, approval, and reimbursement coverage). These scenario-specific impacts were then generalized to the US and European markets, and a range of estimated effects of CER policies were compiled. We simulated the impact of changes in current innovation incentives on producer output and the health of future populations in year 2060 using the Future Elderly Model (FEM). **RESULTS:** Under most scenarios, CER policies would have negative impacts on innovation, and lead to substantial reductions in population life expectancy. Population life expectancy was estimated to be reduced by 14.1% (range, 9.0% to 15.6%) by 2060 due to CER policies related to trends in personalized medicine, 4.4% (-8.1% to +5.5%) related to active comparators, and 7.4% (-11.4% to +10.2%) related to increased trial complexity. Only with multiple innovation-friendly assumptions (such as trial cost reductions, relatively high price increases, and large market size growth driven by personalized medicine), do CER policies generate increases in innovation output and corresponding social value. **CONCLUSIONS:** The potential long-run consequences of CER on innovation and future health calls for careful consideration of CER policies that encourage and incentivize innovation.

HEALTH CARE USE & POLICY STUDIES – Prescribing Behavior & Treatment Guidelines

PHP130

PRESCRIBING PATTERN OF CLINICIANS IN PRIVATE HEALTH FACILITIES: AN ASSESSMENT FOR RATIONAL DRUG USE

Ahmad M[1], Akhtar M[1], Ahmad I[2], Jan SU[3]

[1]*The Islamia University of Bahawalpur, Bahawalpur, Pakistan,* [2]*The Islamia University of Bahawalpur, Bahawalpur, Punjab, Pakistan,* [3]*University of Balochistan, Quetta, Pakistan*

OBJECTIVES: The current study was aimed to explore the prescribing pattern of clinicians practicing at their private clinics for evaluation of rational drug use. **METHODS:** Eight community pharmacies were selected to collect prescriptions randomly and studied for the conformity of the prescriptions issued by clinicians with the general format of a typical prescription and rational drug use, following WHO guidelines. The four months study was comprised of 1230 total number of prescriptions. **RESULTS:** Majority of the prescriptions did not conform to the format of a typical prescription. Twenty three percent (23.2%) of total prescriptions were not included the age of the patient out of which were 30.1% of pediatric prescriptions. Superscription was not mentioned in 10.9% of the prescriptions. Inscription, subscription and signatura were inadequate in 33.4%, 22.6% and 29.2% of the prescriptions, respectively. Seven percent (7%) of total prescriptions were computer generated. The average number of drugs per prescription was found to be 3.4. Generic prescribing was very low at 13.5%. Antibiotics (39.9%) were the highest prescribed drugs while analgesics/antipyretics, antihypertensive, vitamin preparations, antiulcer, anxiolytics and antihistaminic were commonly prescribed drugs. About 19.3% of the encounters had at least one injection prescribed. More than half (56.2%) of the prescribed drugs were from the National Essential Drugs List of Pakistan. **CONCLUSIONS:** A number of prescriptions do not conform to ideal prescribing pattern and lack in their rationality. Overuse of antibiotics & injections, small number of generic prescribing and polypharmacy were observed in private health facilities in Pakistan. The current study can help to recognize the dilemma in therapeutic decision making and to improve the prescribing skills by planning for educational interventions.

PHP131

PATTERN OF PRESCRIBING: INFORMATION FROM COMMUNITY PHARMACIES IN THE PROVINCE OF BASRAH, IRAQ

Al-Tukmagi HF[1], Ibrahim IR[2]

[1]*Baghdad University, Baghdad, Iraq,* [2]*Alrafidain University College, Baghdad, Iraq*

OBJECTIVES: To determine the practice of prescribing medicines by specialized physicians in Basrah. **METHODS:** A drug utilization study was conducted among pharmacies' attendees while purchasing their treatments in Basrah, southern governorate of Iraq, from June to August 2011. A stratified sample method was adopted for selecting community pharmacies. Prescriptions written by specialized physicians were collected and analyzed according to WHO standard treatment guidelines. **RESULTS:** The data were gathered from 896 prescriptions. Unfair number of drugs was prescribed in which the mean number of drugs in a single prescription was 4.0 (+1.8). The value of prescribing indicators was more than the WHO standard indicators. Most of the prescribed medicines (87%) have been written in their generic names. Moreover, the frequently prescribed medicines were antibiotics (45.7%); anxiolytics (19.3%); and corticosteroids (12%). **CONCLUSIONS:** Physicians' adherence to the standard prescribing guidelines was poor in this study. Although the affordability of medicines was good; the practice of prescribing medicines need to be appropriate. Implementing appropriate administrative strategies to improve the current prescribing pattern in Basrah; as well as, patient-educational programs concerning the treatment they receive are warranted. In addition, further studies should be undertaken in other provinces of Iraq in order to understand the country level of prescribing medicines.

HEALTH CARE USE & POLICY STUDIES – Quality of Care

PHP132

GREAT ROC! SO WHAT? BRINGING PREDICTIVE MODELING AND RISK SCORES INTO THE PHYSICIANS' OFFICE

Kohli M[1], Bancroft T[2], Riedel A[2], Drollinger K[2], Wilson J[2]

[1]*OptumInsight, Burlington, ON, Canada,* [2]*OptumInsight, Eden Prairie, MN, USA*

OBJECTIVES: To develop and validate a 30-day readmission risk prediction model for implementation in a site-of-service personalized medicine tool. The readmission risk score (RRS) is easily interpretable by providers and adaptable to variability in input data. **METHODS:** The RRS was developed and validated using administrative claims linked to additional data for commercial and Medicare Advantage (MA) enrollees hospitalized between 01Jan2007 and 30Sep2011. Blocks of candidate predictors (demographics, comorbidities, social determinants of health, mental health conditions, pre-admission service utilization, admission details) were used in logistic regression predicting readmission. Main and interaction effects were examined within blocks and blocks were combined in step-wise fashion. Goodness-of-fit was assessed with Wald chi-square and c-statistics. Sub-models for each combination of blocks accommodated variations in available data. The ROC distribution was used to create an indicator of the utility of each patients' RRS: green for best predictive power, yellow, and red for predictive power too low for use by the care manager in prioritizing patient outreach. **RESULTS:** Overall 30-day readmission rate among hospitalized subjects (N=973,316, 53% female, mean age 55, 8% MA, 13% non-white, mean Charlson score: 1.66) was 7.5%. When subjects with a predicted RRS ≥ 0.10 were classified as 'readmitted,' model statistics were: c-statistic=0.6735, sensitivity=0.3801, specificity=0.8426. Sub-models were classified as having low, moderate, or best predictive ability (c-statistic ranges: 0.5644–0.6002; 0.6183–0.6483; 0.6583–0.6725 respectively). **CONCLUSIONS:** The RRS achieved high specificity; sensitivity and overall c-statistic were not optimal. Predictive ability of the index may be improved in the next phase when both claims and electronic medical records data will be used to reconstruct the RRS. The RRS allows care systems to calculate a risk score at the site-of-service with even a minimum set of data. Providers are presented with the strength of the score so that they may apply limited resources with data-driven intelligence.

PHP133

THE LOWEST-HANGING FRUIT: QUALITY METRICS AND COSTLY HOSPITALIZATIONS

Bueller JA, Ringwelski M, Meyrowitz S, Bastian AW, Richardson SK

GfK Bridgehead, San Francisco, CA, USA

OBJECTIVES: In 2010, Medicare spent over $117 billion in hospital-related expenses. The new Accountable Care Organization (ACO) model promises to reduce some of these costs by allowing providers to financially benefit from any savings they can deliver while also maintaining strong quality with an eye towards prevention of costly hospitalizations. In the short-term, specifically the 3-year trial period, ACOs will need to prioritize their initiatives and target areas where they can be most successful and expedient in reducing costs. We aim to understand whether the CMS-mandated quality benchmarking has the potential to drive a reduction in common and costly hospitalizations through increased diagnostic tests, better care coordination, and management of patients with chronic diseases in the short-term. **METHODS:** This research examines the alignment between 1) the CMS-mandated ACO quality metrics, and 2) the most utilized and costly DRG codes (2010 MedPAR data). We also examine the evidence to support the possibility that a reduction in hospitalizations within these top DRG categories can be achieved. **RESULTS:** Analyses indicate that quality metrics are aligned and can drive reductions in 60% of the top 20 DRG claim categories. These costly DRGs include those for the treatment of chronic obstructive pulmonary disease, renal failure, heart failure, septicemia or severe sepsis, psychoses, and rehabilitation days after hospitalization. Together, these DRG claims cost Medicare over $21 billion in hospital-related expenses in 2010. **CONCLUSIONS:** If ACOs diligently work to achieve their quality benchmarks, they have the potential to deliver savings to CMS by reducing costs through better outpatient care and hospitalization prevention strategies within the top 20 DRG claim categories. However, it remains unclear as to what degree savings can be achieved.

PHP135

THE BENEFITS OF HOSPITAL SPECIALIZATION: EFFECTS ON CLINICAL QUALITY AND FINANCIAL PERFORMANCE

Petratos P[1], Salge O[2], Vera A[3]

[1]*Oxford University, Oxford, UK,* [2]*Ruhr-University Bochum, Bochum, Germany,* [3]*German Police University, Muenster, Germany*

OBJECTIVES: It has been argued that medical specialization has positive benefits for health outcomes. The objective of this study is to assess whether or not specialized, single-service hospital organizations outperform generalist ones **METHODS:** We collected data from all 169 hospital organizations in England that admit adult inpatients. These were observed over two financial years (April 2005-March 2007), producing a total of 338 observation points. Mean patient satisfaction scores were used to measure clinical quality, while financial performance was measured by Return on Assets (ROA). Random effects panel regression analysis with control variables was employed. **RESULTS:** It is observed